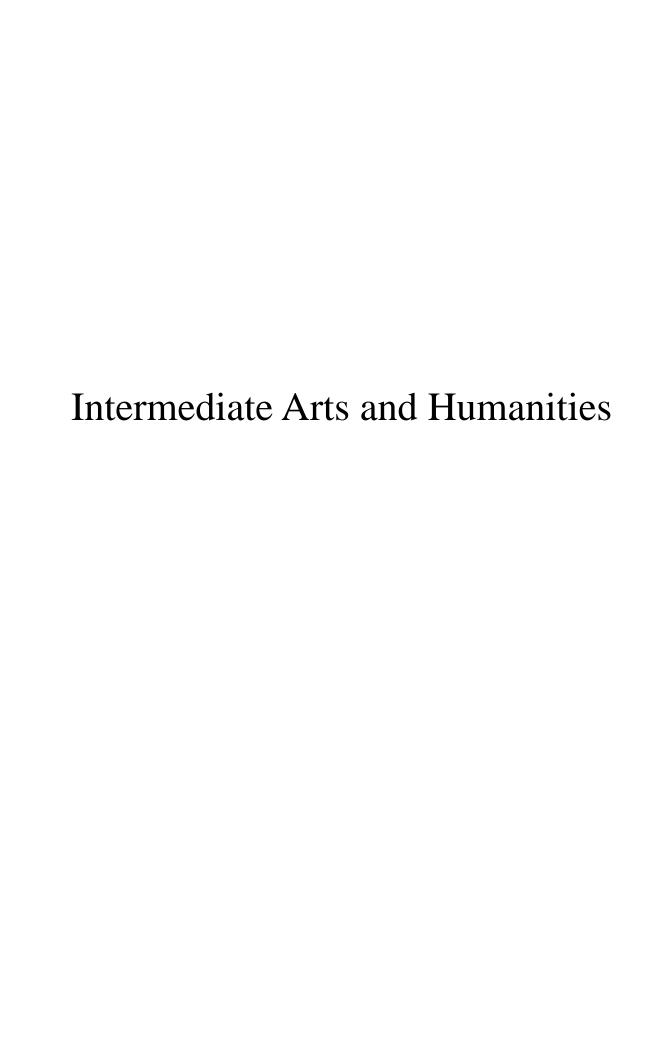
Intermediate Education



Intermediate Arts and Humanities

The content for arts and humanities is aligned with Kentucky's academic expectations. This content provides students with a grounding in the arts and enables them to appreciate their cultural and historical heritage. Included in the arts are dance, music, theatre, and visual arts. The processes of creating, performing, and responding are woven throughout all content and topic areas.

The **dance** strand provides students with opportunities to develop movement skills, to explore dance elements, and to understand that dance is used as a means of communication and self-expression. Through dance, students begin to understand and appreciate their own culture and respect dance as a part of the heritage of other cultures.

In the **music** strand, students begin to understand how music elements are used and combined to create music. The course focuses on the skills of listening, singing, playing, moving, reading, and creating. Students develop an understanding that music performance and composition is a way to express thoughts, feelings, and ideas.

Through the **theatre** content, students understand the elements of drama. Students develop their abilities to perform and to express their understanding of the world through dramatic productions. In addition, students broaden their knowledge of other cultures.

Visual arts study provides students with opportunities to use a variety of media, to gain familiarity with the visual elements and principles of design, and to create art works that serve a variety of purposes. As students examine their own works and those of others, they develop an understanding that visual art works are expressions of one's thoughts, feelings, and ideas.

Through the study of the elements and skills of each art form (dance, music, theatre, visual art) students begin to understand and develop an appreciation of their own cultures, cultures of others and how place and time has influenced artistic expression.

Students also learn that although the various arts disciplines have unique qualities, they share many properties and connect with all other subjects in the curriculum. Arts specialists and generalists work together to provide instruction that allows students to acquire the necessary knowledge and skills for participating in, responding to, and appreciating the arts.

In addition to specifying arts and humanities content, the bulleted items provide connections to Kentucky's Learning Goal 5 (Think and Solve Problems) and Goal 6 (Connect and Integrate Knowledge). These connections provide a more comprehensive link between essential content and the skills and abilities important to learning. Lists in parentheses (designated with an "e.g.") are suggestions for instruction and are not meant to be comprehensive.

The content charts included in this document for the intermediate levels are arranged sequentially by grade. However, it is the prerogative of school councils and local boards of education for schools exempt from school-based decision making to reorganize the content into a format that best meets the needs of their students. This allows schools the opportunity to create integrated, interdisciplinary, or multidisciplinary programs.

Grade 4 Arts and Humanities

Academic Expectations	Content/Process			
Visual Arts (1.13, 2.22, 2.26)	Elements of Arts and Principles of Design Students will • use appropriate terminology to describe the functions of the elements of art (line, shape, color, form, texture, space, value) and principles of design (e.g., balance, emphasis, pattern). • create works of art using the elements of art and principles of design. • compare and contrast visual works of art. Processes and Media Students will • use a variety of media (crayon, pencil, paint, fabric, yarn, clay, paper, paper-mache) and art processes (e.g., drawing, painting, collage, weaving, pottery, sculpture) to produce two- and three-dimensional works of art. • describe how media and processes are used for creating a variety of art works. Historical and Cultural Context Students will • use appropriate terminology to describe art works from different cultures, periods, and styles. • recognize that artists express themselves in different styles.			
Music (1.14, 2.22, 2.26)	 identify various purposes for creating works of art. describe the role of visual arts in different cultures. Elements of Music Students will use elements of music (rhythm, melody, form, timbre, harmony, tempo, dynamics) while performing, singing, instrument playing, moving, listening, reading, writing and creating. recognize and develop music elements. use appropriate terminology to describe the purpose of music elements. use developmentally appropriate performance techniques, practices, and music elements to communicate ideas and emotions. Historical and Cultural Context Students will use appropriate terminology to describe music of diverse cultures, periods, and styles. examine effects of time, place, and personality on music and performance. perform music from diverse cultures, periods, and styles. 			

Grade 4 Arts and Humanities (cont.)

Academic	Content/Process			
Expectations	Floments of Dance			
Dance (1.15, 2.22, 2.26)	Students will • demonstrate the ability to perform a dance alone, with a partner, and in a small group using the three elements of movement (space, time, force). • demonstrate the ability to recognize the relationship between the elements of dance and the expressive qualities of movement (e.g., ideas, emotions). • describe elements of dance and explain how dance differs from other physical movements. • create a movement sequence using the elements of dance. Dance Movements and Forms Students will • explore simple dances with a beginning, middle, and end using a combination of locomotor (walk, run, hop, jump, leap, skip, slide, gallop) and nonlocomotor (e.g., bend, stretch, twist, swing) movements. • create movement sequences that include repetition and variety using different leaves and marked explanation and			
	Historical and Cultural Context Students will • participate in dance activities by performing traditional folk dances, square dances, and ethnic dances (e.g., Native American, African-American) • discuss elements of dance performances seen in various media (e.g., theatre, film, television). • observe performances of classmates and professional dancers. • recognize the value of work performed by others. • recognize that dance is a way of expressing the culture and history of a particular group of people. • recognize the three purposes of dance (ceremonial, recreational, artistic) in society. • identify specific cultures, purposes, and styles of dances.			
	Elements of Drama			
Drama (2.22-2.26)	 Students will use appropriate terminology to discuss elements of drama such as plot, character, visuals (e.g., scenery, costumes, props, make-up), and acting (e.g., voice, expression, diction, projection). create simple dramatic works using the elements of drama. demonstrate through performance various types of drama (e.g., improvisation, mimicry, pantomime, role playing, storytelling). 			
	Historical and Cultural Context Students will • describe how dramatic works reflect specific cultures, periods, and styles. • compare and contrast dramatic works from diverse cultures, periods, and styles.			

Grade 5 Arts and Humanities

Academic Expectations	Content/Process				
	Elements of Arts and Principles of Design				
	Students will • express ideas, images, or patterns utilizing elements of art (line, shape, color, form, texture, space, value) and principles of design (e.g., balance, emphasis, pattern).				
Visual Arts	 analyze how elements of art and principles of design are used in a variety of art works. reflect on, interpret, and revise own works of art and/or works of others. use appropriate terminology to evaluate personal artistic creations and those of others. 				
(1.13, 2.22,	Processes and Media				
2.26)	Students will				
2.12 0)	 use a variety of media (e.g., crayon, pencil, paint, fabric, yarn, clay, paper, paper-mache), and art processes (e.g., drawing, painting, collage, weaving, pottery, sculpture) to produce two- and three-dimensional works of art. describe how media and processes are used for creating a variety of art works. analyze how responses to personal works of art and the works of others are influenced by various media and processes. 				
	Historical and Cultural Context				
	 Students will examine the effects of time, place, and purpose on art forms. investigate and communicate the differences and commonalities in visual artistic expressions from diverse cultures and periods. demonstrate through products forms of art from diverse cultures. create products that demonstrate forms of art from diverse cultures. 				
	Elements of Music				
Music (1.14, 2.22, 2.26)	 Students will express elements of music (rhythm, melody, form, timbre, harmony, tempo, dynamics) through singing, instrument playing, moving, listening, reading, writing, and creating. analyze how elements of music are used in performing, listening to, and/or creating music. create music with developmentally appropriate performance techniques, practices, and music elements to communicate ideas and emotions. create a simple composition using the elements of music. 				
	Historical and Cultural Context				
	 Students will compare and contrast music of diverse cultures, periods, and styles using appropriate terminology. create products to demonstrate music from diverse cultures, periods, and styles. 				

Grade 5 Arts and Humanities (cont.)

Academic	Content/Process				
Expectations					
Dance (1.15, 2.22, 2.26)	Students will • demonstrate the ability to perform a dance alone, with a partner, and in a smargroup using the three elements of movement (space, time, force). • use appropriate terminology to analyze ideas or emotions expressed through movement sequence. • use appropriate terminology to describe how two examples of dance are simil and different. • create a dance that uses the elements of dance. Dance Movements and Forms Students will • describe how locomotor (walk, run, skip, hop, jump, slide, leap, gallop) an nonlocomotor (e.g., bend, stretch, twist, swing) movements are used to creat simple dances. • create and perform in a small group simple dances with a beginning, middle, and end using a combination of locomotor and nonlocomotor movements. Historical and Cultural Context Students will • participate in dance activities by performing traditional folk dances, square dances, and ethnic dances (e.g., Native American, African American). • describe dances of different cultures, purposes, and styles. • analyze personal creations and those of others using appropriate vocabulary. • express openness to differences and commonalities among diverse culture purposes, and styles. • demonstrate knowledge of the origin and history of a variety of dances.				
2.20)					
	Elements of Drama Students will • analyze elements of drama such as plot, character, visuals (e.g., scenery, costumes, props, make-up), and acting (e.g., voice, expression, diction, projection) in a				
variety of dramatic works. • collaborate with others to create dramatic works using the eleme • reflect on, interpret, and revise own work and/or works of other • use appropriate terminology to evaluate personal dramatic creat of others.					
	Historical and Cultural Context Students will communicate recognition of specific cultures, periods, and styles within dramatic works. examine the effects of time, place, and personality on dramatic works. create products or performances to demonstrate drama from diverse cultures. describe and discuss theatres' roles in and contributions to communities.				



Intermediate English/Language Arts

The intermediate grades English/Language Arts content is aligned with Kentucky's academic expectations. Blended together are the strands of reading, writing, speaking, listening, observing, inquiry, and using technology as a communication tool. Students in grades four and five build on their communication skills from primary, as well as further develop those skills in preparation for their middle school experiences.

The content of intermediate grades English/Language Arts is designed to present a wide range of reading experiences with print and nonprint text for literary, informational, persuasive, and practical purposes. Students use writing-to-learn and writing-to-demonstrate-learning strategies, as well as the writing process and criteria for effective writing, to write in a variety of forms, and for multiple audiences and purposes. The arts and humanities academic expectations concerning creating (2.22) and appreciating works of art (2.24 and 2.25) are appropriately embedded within the context of reading and writing; however, they are not intended to be the primary focus of English/Language Arts instruction. Speaking, listening, and observing skills are used to communicate information for a variety of authentic purposes, situations, and audiences. The integration of inquiry skills and technology with the other strands allows students to continue to discover and communicate ideas and information. Furthermore, the skills and processes from Kentucky's Learning Goal 5 (Think and Solve Problems) and Goal 6 (Connect and Integrate Knowledge) are incorporated throughout the content of English/Language Arts.

Each of the five strands begins with a statement in boldface type which describes the general content of that strand. The skills/processes in the bulleted list provide further focus for the minimum content to be covered at each grade level. Statements in boldface type and the bulleted lists must be combined for a complete description of the grade-level content.

The content charts for the intermediate levels are arranged sequentially by grade. However, it is the prerogative of school councils and local boards of education for schools exempt from school-based decision making to reorganize the content into a format that best meets the needs of their students. This allows schools the opportunity to create integrated, interdisciplinary, or multidisciplinary programs. Lists in parentheses (designated with an "e.g.") are suggestions for instruction and are not meant to be comprehensive.

Grade 4 English/Language Arts

Academic	Contact Decome			
Expectations	Content/Process			
Donding	Students apply appropriate reading strategies to make sense of a variety of print and nonprint texts (literary, informational, practical/workplace, and persuasive) to reach personal goals, to understand the human experience, to create products, to accomplish authentic tasks, and to develop ideas in written/oral responses. Students will			
Reading (1.2) Arts and Humanities (2.24, 2.25)	 understand and respond to a variety of reading materials, making connections to students' lives, to real world issues, and/or to current events (additional supporting Academic Expectation 6.1). recognize characteristics and elements of different kinds of works. utilize text features and organizational patterns to interpret transactive reading materials (informational, practical/workplace, and persuasive). respond to authors' opinions and details used to support those opinions. select and read materials for enjoyment. employ reading strategies (e.g., word analysis, re-reading, context clues, pre-reading, raising questions, predicting, drawing conclusions). use contextual vocabulary and comprehension strategies to understand text. 			
Academic Expectations	Content/Process			
Writing (1.11) Arts and Humanities (2.22)	 Students use the writing process and criteria for effective writing in pieces developed over time, as well as in on-demand writing situations, to compile a collection of writings for a variety of authentic purposes and audiences and in a variety of forms, including personal, literary, transactive and reflective pieces. Students will respond to reading, listening, observing, and inquiry through applying writing-to-learn strategies in situations such as journals and graphic organizers and writing-to-demonstrate-learning strategies in situations such as open-response questions and graphic organizers (additional supporting Academic Expectations 1.10, 5.1, 6.3) use information from technology and other resources to produce writing that develops and supports independent ideas (additional supporting Academic Expectation 5.1). write transactive pieces (writing produced for authentic purposes and audiences beyond completing an assignment to demonstrate learning) based on personal experiences, reading, listening observing, and/or inquiry (additional supporting Academic Expectation 6.3). write literary pieces that show an understanding of characteristics of literary works (additional supporting Academic Expectation 5.2). write personal pieces to communicate ideas. identify and apply characteristics of effective writing in producing and discussing their own work, including awareness of audience and purpose, organization, idea development, and standards of correctness (e.g., mechanics, grammar, spelling). 			

Grade 4 English/Language Arts (cont.)

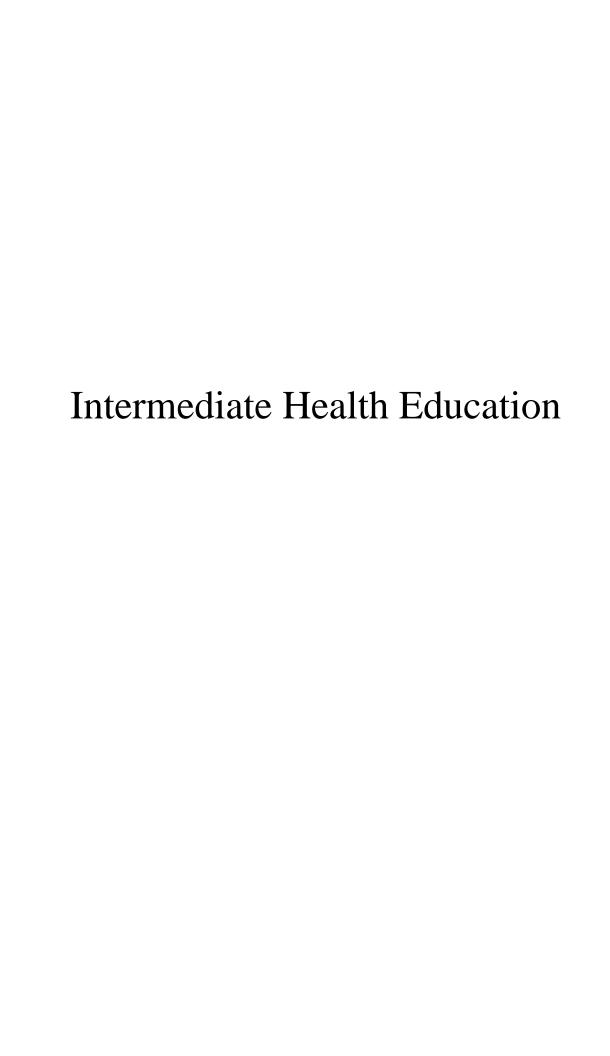
Academic Expectations	Content/Process			
Speaking/ Listening/	Students construct meaning from observing and listening and apply techniques for effective speaking to communicate ideas and information for a variety of authentic purposes, situations, and audiences. Students will			
Observing (1.3, 1.4, 1.12)	 recognize the purpose and effectiveness of both formal and informal messages. prepare and deliver formal presentations individually and/or collaboratively for specific audiences, purposes, and situations (additional supporting Academic Expectation 5.3). 			
	• apply listening, speaking, and observing skills to conduct authentic inquiry tasks (additional supporting Academic Expectation 5.1).			
Academic Expectations	Content/Process			
Inquiry (1.1)	 Independently and collaboratively, students use a variety of resources methods, and research tools to access ideas and information to learn and to communicate ideas for specific purposes. Students will identify information and resources needed to address student-developed questions take notes from research. use technology as a research tool to explore and gather ideas and information for authentic tasks. 			
Academic Expectations	Content/Process			
Technology as Communication	Students use available and emerging technology to gather, organize, manipulate, and express ideas and information for a variety of authentic purposes. Students will			
(1.16)	use technology to access ideas and information.explore technology as a means of communication.			

Grade 5 English/Language Arts

Academic	Grade 3 English/Language Arts			
Expectations	Content/Process			
Reading (1.2) Arts and Humanities (2.24, 2.25)	Students apply a variety of appropriate reading strategies to make sense of a variety of print and nonprint texts (literary, informational, practical/workplace, and persuasive) to reach personal goals, to understand the human experience, to create products, to accomplish authentic tasks, and to develop ideas in written/oral responses. Students will • identify meaning from a variety of reading materials, making connections to students' lives, to real world issues, and/or to current events (additional supporting Academic Expectation 6.1). • recognize characteristics and elements of different kinds of literary works. • identify and apply information contained in directions and forms to complete authentic tasks. • employ reading strategies to locate and apply ideas and information for inquiry projects and other authentic tasks.			
	 select and read materials for enjoyment. respond to a variety of reading materials by summarizing, identifying sequence, generalizing, and comparing/contrasting. use vocabulary and comprehension strategies in context, as well as technology, to understand text. 			
Academic Expectations	Content/Process			
Writing (1.11) Arts and Humanities (2.22)	 Students use the writing process and criteria for effective writing in pieces developed over time, as well as in on-demand writing situations, to compile a collection of writings for a variety of authentic purposes and audiences and in a variety of forms, including personal, literary, transactive, and reflective pieces. Students will respond to reading, listening, observing, and inquiry through applying writing-to-learn strategies in situations such as journals and graphic organizers and writing-to-demonstrate-learning strategies in situations such as open-response questions and graphic organizers (additional supporting Academic Expectations 1.10, 5.1, 6.3) use information from technology and other resources to produce writing that develops and supports independent ideas and contains source citations (additional supporting Academic Expectation 5.1). write transactive pieces (writing produced for authentic purposes and audiences beyond completing an assignment to demonstrate learning) which develop ideas for authentic audiences and purposes (additional supporting Academic Expectation 6.3). write literary pieces which show an understanding of characteristics of literary works (additional supporting Academic Expectation 5.2). write personal pieces, including essays, which reflect on personal experience and make connections to real-world issues (additional supporting Academic Expectation 6.3). apply characteristics of effective writing in their own works and recognize them in works of others, including awareness of audience and purpose, organization, idea development, and standards of correctness (e.g., mechanics, grammar, spelling). 			

Grade 5 English/Language Arts (cont.)

Academic Expectations	Content/Process			
	Students construct meaning from observing and listening and apply techniques for effective speaking to communicate ideas and information for a variety of authentic purposes, situations, and audiences. Students will			
Speaking/ Listening/ Observing (1.3, 1.4, 1.12)	 adjust communication based on audience, purpose, and situation. prepare and deliver formal presentations individually and/or collaboratively for specific audiences, purposes, and situations, with and without technology and visual aids (additional supporting Academic Expectations 5.3). use appropriate delivery techniques including correct and appropriate language, nonverbal cues, and visual aids. apply listening, speaking, and observing skills to conduct and to respond to authentic inquiry tasks (additional supporting Academic Expectation 5.1). 			
Academic Expectations	Content/Process			
	Independently and collaboratively, students use a variety of resources, methods, and research tools to access ideas and information to learn and to communicate ideas for a specific purpose. Students will			
Inquiry (1.1)	 develop questions to obtain ideas and information for authentic tasks. identify types of resources for a variety of tasks and select resources appropriate for specific tasks (additional supporting Academic Expectation 5.4). explore research tools to gather ideas and information for a variety of authentic tasks. identify sources by title and author in written and oral products. 			
Academic Expectations	Content/Process			
Technology as Communication (1.16)	Students use available and emerging technology to gather, organize, manipulate, and express ideas and information for a variety of authentic purposes. Students will • use technology to access ideas and information. • explore technology as a means of communication.			



Intermediate Health Education

Intermediate health education builds upon the knowledge, skills, and practices learned in the primary health education program. Continued acquisition of health knowledge enables students to make a smooth transition to the middle grades and prepares them to assume more responsibility for their own health.

Students in intermediate health education focus on good nutrition, health and safety practices, decision-making skills, disease prevention, and benefits of exercise. Other topics included are community resources, prevention of violence, and substance abuse.

The vertical column on each chart contains Kentucky's academic expectations to be taught in intermediate health education. In addition to specifying health education content, the bulleted items in the charts provide connections to Kentucky's Learning Goal 5 (Think and Solve Problems) and Goal 6 (Connect and Integrate Knowledge). These connections provide a comprehensive link between essential content and the skills and abilities important to learning. Lists in parentheses (designated with an "e.g.") are suggestions for instruction and are not meant to be comprehensive.

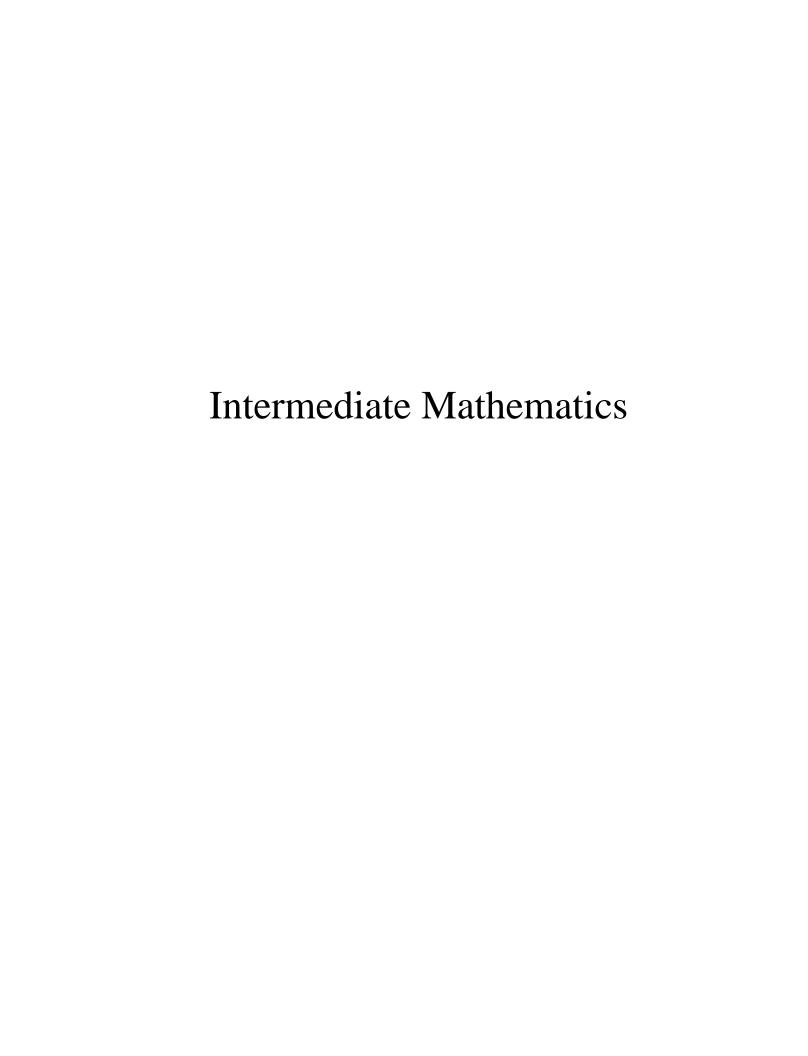
The content charts included in this document for the intermediate levels are arranged sequentially by grade. However, it is the prerogative of school councils and local boards of education for schools exempt from school-based decision making to reorganize the content into a format that best meets the needs of their students. This allows schools the opportunity to create integrated, interdisciplinary, or multidisciplinary programs.

Grade 4 Health Education

Academic	Grade 4 Health Education
Expectations	Content/Process
Individual Well-Being (2.29)	 Students will explain and exhibit responsibility to oneself (e.g., do your best, be the best you can be). describe and practice responsibility to others. demonstrate respect for others. examine the role of rules for the effective functioning of groups. distinguish between goal setting and achievement. recognize that physical, emotional, and social changes are a normal part of growth and development. explain how individuals and groups are interdependent. explore strategies for dealing with conflict and anger.
Consumer Decisions (2.30)	 Students will evaluate media and advertising techniques. describe the differences between needs and wants. determine ways in which goods and services used by families impact the environment. select planning and saving strategies for specific purchases.
Personal Wellness (2.31)	 Students will identify and practice good personal health habits (e.g., washing hands, brushing and flossing teeth). use good health habits that prevent the spread of diseases. follow school safety rules (e.g., playground, bus, classroom). practice school safety procedures (e.g., tornado, fire, earthquake drills). adhere to traffic safety rules (e.g., crossing streets, riding bikes). use personal safety strategies (e.g., when to say no). demonstrate procedures for basic emergency assistance. use food guide pyramid to identify food groups and appropriate servings as well as to plan nutritious snacks. recognize how food affects physical growth and development.
Mental Wellness (2.32)	Students will • examine positive and negative consequences of choices. • identify purposes and proper uses of medications. • identify non-medicinal drugs and the risks of taking such drugs. • analyze situations that cause stress and develop ways to manage stress. • develop an awareness of personal rights and responsibilities. • develop decision-making strategies.
Community Services (2.33)	 Students will identify roles and responsibilities of health-care workers in schools and communities. access community-sponsored agencies that maintain and promote health and safety. identify agencies that protect the environment.

Grade 5 Health Education

Academic Expectations	Content/Process			
Individual Well-Being (2.29)	 Students will demonstrate responsibility to oneself and others. apply rules in groups and determine how their application enables groups to function effectively. demonstrate how individuals and groups are interdependent. determine unsafe or threatening situations and procedures for dealing with them. apply conflict resolution strategies. 			
Consumer Decisions (2.30)	 Students will analyze differences between needs and wants and provide examples. apply decision-making strategies when buying products based on price, features, and quality. practice planning and saving strategies for specific purchases. 			
Personal Wellness (2.31)	 Students will describe the impact of diet, exercise, and rest on health and disease prevention. practice good health habits (e.g., washing hands, brushing and flossing teeth, bathing, sun protection) and determine how they affect self and others. describe how good nutrition helps develop healthy individuals. examine food guide pyramid to determine appropriate servings and plan simple menus. identify health and safety hazards at home, school, and play. describe safe traffic/transportation practices. explain and exhibit personal safety strategies. demonstrate procedures for basic emergency assistance. 			
Mental Wellness (2.32)	Students will • analyze positive and negative consequences of choices and actions. • examine purposes and proper uses of medicines. • examine risks associated with the use of non-medicinal drugs. • apply stress management strategies.			
Community Services (2.33)	 Students will identify governmental health and safety regulations. describe and access health and safety services that agencies (e.g., health department, fire department, police department) provide to the community. identify community guidelines (e.g., animal control, sanitation, immunization) that promote healthy environments. 			



Intermediate Mathematics

Content in the intermediate level course mathematical charts is directly aligned with Kentucky's academic expectations. Each content chart presents the topics that are fundamental to mathematical literacy and mathematical power for all intermediate level students. Content statements are organized under common topic headings for fourth and fifth grades, and each statement can be related to other statements. Lists in parentheses (designated with an "e.g.") are suggestions for instruction and are not meant to be comprehensive.

Systematic review of earlier concepts and procedures is also an integral part of the intermediate program. Features of the intermediate level mathematics programs include active, hands-on work with manipulatives (concrete materials) and appropriate technologies.

Intermediate level problem solving, mathematical communication, connections, and mathematical reasoning should be a part of the mathematics curriculum. Accuracy is an integral part of the mathematics program.

Problem solving includes developing and applying strategies to problems from everyday and mathematical situations and evaluating the solutions relative to the original problem situation.

Mathematical communication includes concrete materials, visual representations, and diagrams that relate language to mathematical symbols in speaking, reading, writing, and listening to mathematical ideas.

Mathematical connections include

- relating concepts to other concepts and procedures (e.g., fraction, decimal),
- relating concepts of one mathematical topic to another (e.g., geometry, measurement),
- relating concepts of a mathematical topic to other disciplines (e.g., statistics, social studies).

Mathematical reasoning includes recognizing patterns and relationships and using models, known facts, and mathematical properties to explain and justify thinking.

Content charts included in this document for the intermediate levels are arranged sequentially by grade. However, it is the prerogative of school councils and local boards of education for schools exempt from school-based decision making to reorganize the content into a format that best meets the needs of their students. Schools have the opportunity to create integrated, interdisciplinary, and multidisciplinary programs.

Grade 4 Mathematics

This chart lists the concepts that should be included in intermediate level math courses. Intermediate level mathematics programs address Academic Expectations 1.5 to 1.9, Mathematical Communication and Reasoning; 1.16, Technology; 2.7, Number Concepts; 2.8, Mathematical Procedures; 2.9, Space and Dimensionality; 2.10, Measurement; 2.11, Change; 2.12, Mathematical Structure; 2.13, Probability and Statistics; Goal 5, Think and Solve Problems; and Goal 6, Connect and Integrate knowledge.

Academic Expectations	Content/Process			
	Problem Solving	Communication	Connections	Reasoning
Numbers, Integers & Place Value (2.7, 2.8, 2.12)	 Students will read, write, and model whole numbers from 0 to 1,000,000, developing place value for hundred thousands and millions. order and compare numbers to 1,000,000. understand the relative magnitude of whole numbers to 1,000,000. determine factors/multiples of a whole number. 			
Fractions & Decimals (2.7, 2.8, 2.12)	 Students will compare unit fractions (e.g., numerator of 1) using manipulatives. investigate multiple representations of equivalent fractions (e.g., 1/2 = 3/6) with manipulatives. read, write, and identify decimals through one-thousandths with manipulatives. develop equivalent relationships between common fractions, decimals, and whole numbers (e.g., 1/2 = 0.5, 4/2 = 2, 2 = 2.0). explore appropriate estimation procedures. 			
Number Computation (2.7, 2.8, 2.12)	 Students will understand and apply computational procedures for adding, subtracting, multiplying, and dividing whole numbers using memorized basic facts. add and subtract fractions with common denominators using manipulatives and/ or diagrams. add, subtract, multiply, and divide whole numbers. 			
Geometry (2.8, 2.9, 2.12)	 Students will analyze structures of geometric figures (e.g., points, rays, lines, segments, perpendicular lines, parallel lines, angles). investigate geometric relationship (e.g., similarity, congruence) through manipulatives and drawings. compare and explore non-standard units for measuring angles. 			

Grade 4 Mathematics (cont.)

Academic Expectations	Content/Process				
	Problem Solving	Communication	Connections	Reasoning	
Measurement (2.8, 2.10, 2.12)	 Students will relate time to days, weeks, months, and years. add and subtract time. read and record temperatures to the nearest degree. measure and find area and perimeter of a rectangle. measure and find perimeter of regular/irregular shapes; and measure and find the area of rectangle. exchange units (e.g., linear, volume, mass) within a measurement system (e.g., 2 feet = 24 inches). 				
Algebraic Ideas (2.8, 2.11, 2.12)	 Students will compare and contrast number patterns. explore variables and solve equations using variables. formulate rules for number relationships. graph points on a number line. represent and describe relationships through the use of variables, ordered pairs, lists in tables, plots on graphs, and patterns. 				
Probability & Statistics (2.8, 2.12, 2.13)	 Students will explore circle graphs. choose appropriate means to collect and represent data. explore line graphs to show change over time. pose questions, collect, organize, and display data. draw conclusions based on data. make predictions to determine the fairness of possible outcomes of simple probability experiments using a variety of appropriate manipulatives. use counting techniques and/or tables to explore probability experiments. 				

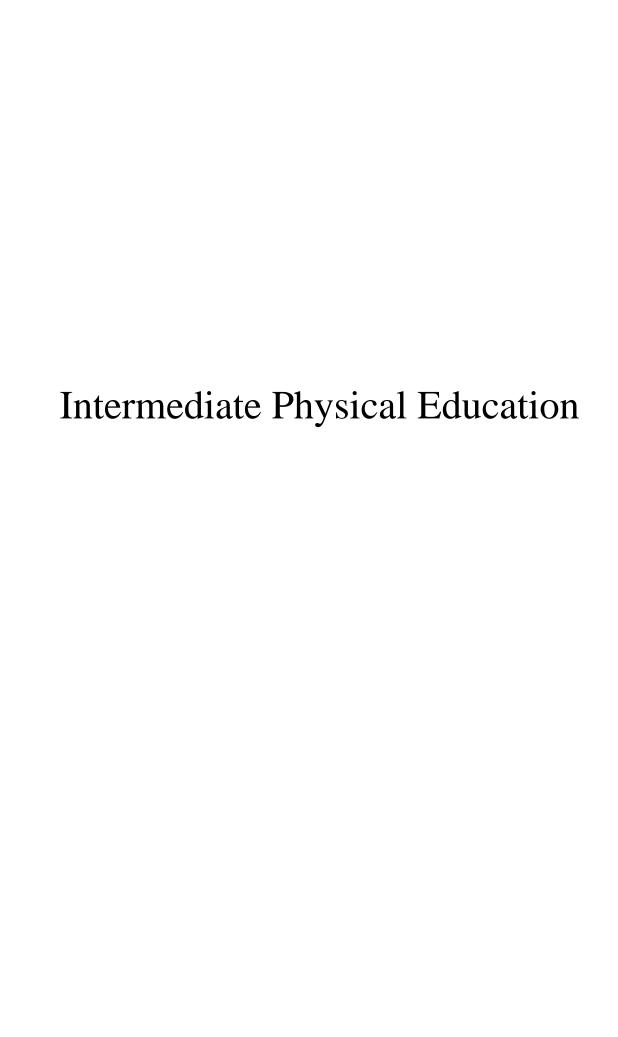
Grade 5 Mathematics

This chart lists the concepts that should be included in intermediate level math courses. Intermediate level mathematics programs address Academic Expectations 1.5 to 1.9, Mathematical Communication and Reasoning; 1.16, Technology; 2.7, Number Concepts; 2.8, Mathematical Procedures; 2.9, Space and Dimensionality; 2.10, Measurement; 2.11, Change; 2.12, Mathematical Structure; 2.13, Probability and Statistics; Goal 5, Think and Solve Problems; and Goal 6, Connect and Integrate knowledge.

Academic Expectations	Content/Process			
	Problem Solving	Communication	Connections	Reasoning
Numbers, Integers & Place Value (2.7, 2.8, 2.12)	 Students will read, write, and model whole numbers from 0 to 100,000,000, developing place value for ten millions and one hundred millions. order and compare numbers to 100,000,000. use factors to determine prime and composite numbers. determine least common multiples. explore appropriate estimation procedures. 			
Fractions & Decimals (2.7, 2.8, 2.12)	 Students will compare and apply the relative sizes of common and mixed fractions. investigate multiple representations of equivalent fractions (e.g., 1/2 = 3/6, mixed numbers 1 1/2 = 3/2) with manipulatives, drawings, and fractional notation. read, write, and identify decimals through ten-thousandths. explore appropriate estimation procedures. 			
Number Computation (2.7, 2.8, 2.12)	 Students will add and subtract simple fractions with common denominators using manipulatives or symbolic notation. add and subtract decimals to hundredths using manipulatives or symbolic notation. explore appropriate estimation procedures. 			
Geometry (2.8, 2.9, 2.12)	 Students will identify and model basic two- and three-dimensional shapes by appearance and in different orientations (i.e., turn models different ways). measure and construct angles to the nearest degree. classify angles as acute, obtuse, or right. 			
Measurement (2.8, 2.10, 2.12)	 Students will use charts and tables to determine time schedules and work with time zones. determine area and perimeter of triangles and rectangles. relate units (e.g., linear, volume, mass) within a measurement system (e.g., 125 cm = 1 m 25 cm). 			

Grade 5 Mathematics (cont.)

Academic Expectations	Content/Process			
	Problem Solving	Communication	Connections	Reasoning
Algebraic Ideas (2.8, 2.11, 2.12)	Students will create, recognize, extend, find, and write rules for number patterns. explore variables and solve equations using variables. generalize a rule for ordered pairs.			
Probability & Statistics (2.8, 2.12, 2.13)	 Students will develop meaning and interpretation of arithmetic mean (average) for numerical data. pose questions; collect, organize, display data; and choose an appropriate way to collect and represent data. use counting techniques, tree diagrams, and tables to explore probability experiments. explore how sample size affects the reliability of the outcome. make predictions. find mean, median, mode, and range for a set of data. 			



Intermediate Physical Education

The intermediate physical education program continues the development and refinement of motor skills and their application to various games, sports, and other physical activities. Defining fitness skills and building positive attitudes toward lifetime physical fitness are some benefits derived from participation in intermediate physical education programs.

Students in intermediate level physical education develop and refine movement patterns, socially acceptable behavior, and sportsmanship through participation in activities and games. They also learn the relationship between exercise, rest, and nutrition to growth and development.

The vertical column on each chart contains Kentucky's academic expectations to be taught. In addition to specifying physical education content, the bulleted items in the charts provide connections to Kentucky's Learning Goal 5 (Think and Solve Problems) and Goal 6 (Connect and Integrate Knowledge). These connections provide a comprehensive link between essential content and the skills and abilities important to learning. Lists in parentheses (designated with an "e.g.") are suggestions for instruction and are not meant to be comprehensive.

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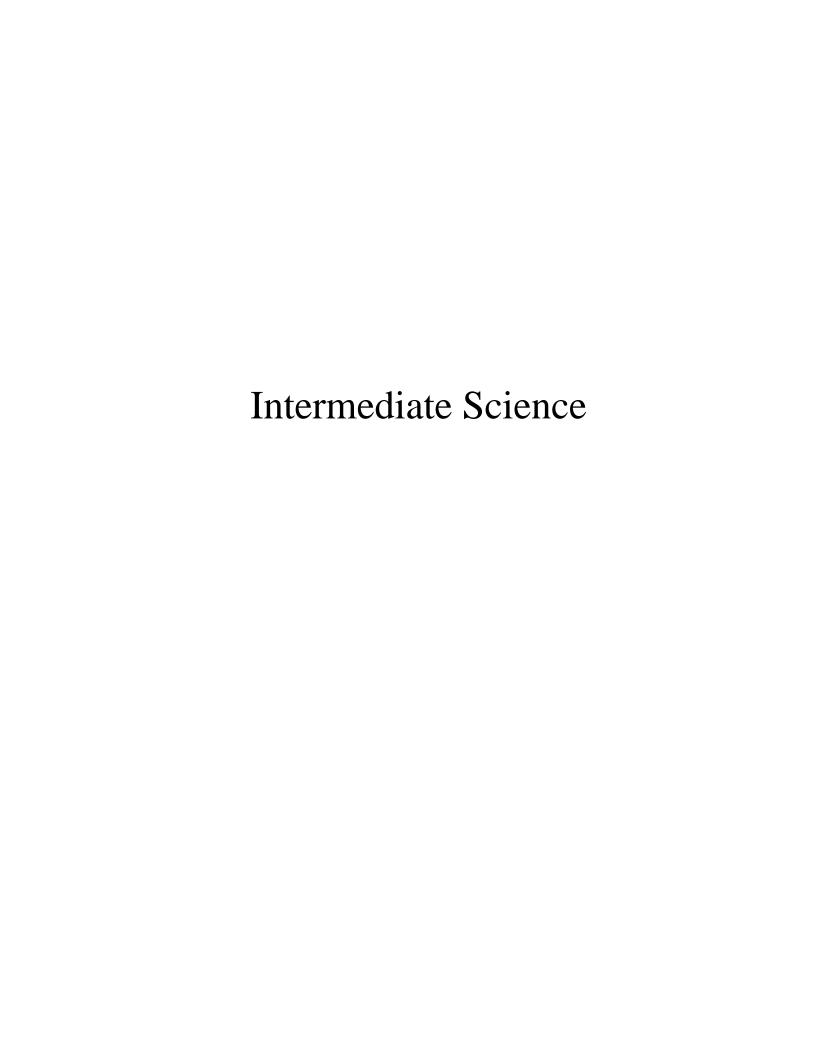
All physical education courses taught in the state of Kentucky must be in compliance with P.L. 105-17 and Title IX and shall not include practice for or participation in interscholastic athletics.

Grade 4 Physical Education

Academic Expectations	Content/Process
Personal Wellness (2.31)	 Students will identify benefits of regular participation in physical activity. exercise to improve strength, fitness, and wellness. monitor pulse rate. demonstrate cardiorespiratory endurance. demonstrate stretching exercises. recognize benefits of participation in school and community recreational activities.
Psychomotor (2.34)	 Students will perform fundamental skills (e.g., throwing, catching, kicking, striking, jumping, dribbling) while improving speed and accuracy. develop multi-combination of movements required for successful involvement in sports and physical activities. develop and refine movement patterns using locomotor (e.g., walk, run, hop) and nonlocomotor (e.g., push, pull, twist, turn, curl, stretch, balance) skills and manipulatives. demonstrate proficiency in a variety of movement skills. apply movement strategies in various games and sports.
Lifetime Activity (2.35)	 Students will demonstrate cooperation with partners in small and large groups. practice to improve skills. apply the concept of sportsmanship (e.g., complying with rules, responding appropriately) in games, sports, and physical activities.

Grade 5 Physical Education

Academic Expectations	Content/Process
Personal Wellness (2.31)	 Students will explain the relationship of exercise to fitness and wellness. explain concepts of muscular strength and endurance, flexibility, and cardiorespiratory endurance. evaluate their own progress toward fitness goals using appropriate instruments (e.g., stopwatch, tape measure). perform stretching, strengthening, and cardiorespiratory exercises.
Psychomotor (2.34)	 Students will improve competency and consistency in performing locomotor (e.g., walk, run, hop) and nonlocomotor (e.g., push, pull, twist, turn, curl, stretch, balance) skills in games and sports. demonstrate movement concepts as they are used in various games and activities (e.g., space awareness, effort, relationship that occurs between objects and individuals). exhibit motor skills with fundamental locomotor movement (e.g., walk, run, hop) in the performance of games and sports. create and perform a dance as a member of a small or large group.
Lifetime Activity (2.35)	 Students will refine practice techniques to achieve consistency for a variety of physical activities. demonstrate sportsmanship (e.g., complying with rules, responding appropriately) in games and sports activities. investigate the benefits of participation in leisure, recreational, and competitive physical activity.



Intermediate Science

The emphasis on minds-on, concrete, hands-on experiences will continue for intermediate students. The abstract concepts of science (e.g., atoms and chemical reactions, solar system) that appear at higher grade levels will be developed from these concrete experiences. Intermediate students will develop more specific descriptions of the simple observations made in primary of the physical world, the Earth and sky, and living organisms. They will improve their descriptions by including measuring and recording results. Intermediate students will have the ability to do science, begin to understand science concepts, know that science is useful, and know how science is connected to their world.

Intermediate level science contains the physical, earth/space, and life science concepts shown in the **conceptual understandings** chart. These concepts will be taught through scientific inquiry and applications and connections. Kentucky's Academic Expectations 2.2 through 2.6 provide ways of thinking that help students link physical, earth/space, and life science concepts to scientific inquiry and applications and connections.

Scientific inquiry is identical to Academic Expectation 2.1: "Students understand scientific ways of thinking and working and use those methods to solve real-life problems." Scientific inquiry is not a standard "scientific method"; rather it includes a variety of types of investigations. Scientific inquiry requires the use of science concepts to design investigations and to develop explanations from the results of those investigations. Kentucky's Learning Goal 5 (Think and Solve Problems) and Learning Goal 6 (Connect and Integrate Knowledge) are reflected in scientific inquiry.

Scientific applications/connections show science concepts in a variety of contexts to demonstrate that science is relevant to individuals and society. Scientific applications/connections show how science concepts are connected to real life and how science can be used to solve real life problems. Kentucky's Academic Expectations 2.2 through 2.6 provide ways of thinking that help students link science concepts to scientific applications/connections. Kentucky's Learning Goal 5 (Think and Solve Problems) and Learning Goal 6 (Connect and Integrate Knowledge) are also reflected in scientific applications/connections.

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Grade 4 Science

Academic Expectations	Content/Process
Scientific Inquiry Scientific Ways of Thinking and Working (2.1)	 Students will ask simple scientific questions that can be answered through observations combined with scientific information. use simple equipment (e.g., plant lights), tools (e.g., rulers, thermometers), skills (e.g., describing), technology (e.g., electronic media), and mathematics in scientific investigations. use evidence (e.g., descriptions) from simple scientific investigations and scientific knowledge to develop reasonable explanations. design and conduct different kinds of simple scientific investigations. communicate (e.g., graph, write) designs, procedures, and results of scientific investigations. review and ask questions about scientific investigations and explanations of other students.
	Physical Science
	Properties of Objects and Materials
Conceptual Understandings Patterns, Systems, Scale and Models, Constancy, and Change Over Time (2.2-2.6)	Students will understand that • properties (e.g., size, shape) of materials can be measured and used to describe, separate, or sort objects. • materials can exist in different states and some common materials (e.g., water) can change states. Position and Motion of Objects Students will understand that • the position and motion of an object can be described (e.g., measured, observed) by comparing it to another object or background. • the position and motion of an object can be changed by pushing or pulling. • sounds are caused by vibrating objects. Light, Heat, Electricity, and Magnetism
	 Students will understand that magnets attract and repel each other as well as certain kinds of other materials. electrical currents move through electrical circuits. Electricity in circuits can produce light, heat, sound, and magnetic effects. heat can be produced in many ways and can move from one object to another by conduction. light travels in a straight line until it strikes an object. Light can be reflected, refracted, or absorbed by objects.

Grade 4 Science (cont.)

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Academic Expectations	Content/Process
	Earth/Space Science
	Properties of Earth Materials Students will understand that • Earth's materials are solids (e.g., rocks, soils), water (e.g., oceans), and gases (e.g., oxygen). • fossils provide evidence about organisms that lived long ago. • Earth's materials have different physical (e.g., capacity to retain water) and chemical (e.g., ability to support plants) properties and provide resources that humans use.
	Objects in the Sky
	 Students will understand that the Sun provides the light and heat necessary to maintain the temperature of the Earth. common objects in the sky (e.g., stars, clouds, airplanes) have properties, locations, and movements that can be observed and described.
Conceptual	Changes in the Earth and Sky
Understandings Patterns, Systems, Scale and Models,	 Students will understand that objects in the sky (e.g., Sun, moon) have patterns of movement. weather changes from day to day and over the seasons. Weather can be described by observing and measuring temperature, wind direction and speed, and precipitation. Earth's surface changes are due to slow (e.g., weathering) and rapid (e.g., volcanic eruptions) processes.
Constancy,	Life Science
and Change Over Time (2.2-2.6)	Characteristics of Organisms Students will understand that • organisms have basic needs (e.g., air, water, nutrients, light) and can only survive when these needs are met. • behavior of individual organisms is influenced by stimuli (e.g., touch, hunger). • organisms have different structures that serve different functions. These structures are used to sort organisms into groups.
	Life Cycles of Organisms Students will understand that • organisms resemble their parents. • organisms have life cycles that are different for different organisms. • characteristics of organisms are inherited or learned.
	Organisms and Their Environments Students will understand that • organisms' patterns of behavior are related to the nature of organisms' environments. There are many different environments (e.g., deserts, rain forests) on Earth that support different types of organisms. • all animals depend on plants for food. • organisms change the environment. These changes may be detrimental or beneficial.
Applications/ Connections Patterns, Systems, Scale and Models, Constancy, and Change Over Time (2.2-2.6)	 Students will use science to design simple technological solutions (e.g., paper clips, stapler) to problems. describe the role of science and technology in dealing with local issues (e.g., landfill location). examine the role science plays in everyday life.

Grade 5 Science

Academic	
Expectations	Content/Process
Scientific Inquiry Scientific Ways of Thinking and Working (2.1)	 Students will identify questions that can be answered through scientific investigations combined with scientific information. use appropriate equipment (e.g., watches), tools (e.g., rain gauges), techniques (e.g., classifying), technology (e.g., calculators), and mathematics in scientific investigations. use evidence (e.g., classifications), logic, and scientific knowledge to develop scientificexplanations. design and conduct different kinds of scientific investigations to answer different kinds of questions. communicate (e.g., draw, speak) designs, procedures, and results of scientific investigations. review and analyze scientific investigations and explanations of other students.
	Physical Science
	Transfer of Energy
Conceptual Understandings	 Students will demonstrate that energy is a property of substances. observe forms of energy transfer (e.g., vibrations in materials). observe the ways heat can move. recognize that the Sun's energy arrives as light with a range of wavelengths and explore how light interacts with matter. observe how electrical circuits transfer electrical energy.
Patterns, Systems,	Earth/Space Science
Scale and Models, Constancy, and Change Over Time (2.2-2.6)	Structure of the Earth System Students will • model the water cycle and how water dissolves minerals and gases and carries them to the oceans. • explore the characteristics of the atmosphere and how the water cycle affects the atmosphere, clouds, weather, and climate. • investigate living organisms' effects (e.g., changes in the composition of the atmosphere and the environment) on the Earth system.
	Life Science
	Structure and Function in Living Systems
	 Students will recognize the relationship between structure and function at all levels of organization (e.g., organ systems, whole organisms, ecosystems). model cells and recognize that cells carry on functions needed to sustain life.
Applications/ Connections Patterns, Systems, Scale and Models,	 Students will examine the role of science in explaining and predicting natural events (e.g., floods, earthquakes, volcanoes). demonstrate the role science plays in everyday life and explore different careers in science. recognize how science is used to understand changes in populations, issues
Constancy, and Change Over Time (2.2-2.6)	related to resources, and changes in environments.



Intermediate Social Studies

Intermediate level social studies utilizes the five strands of social studies (historical perspective, geography, economics, government and civics, and culture and society) in an integrated program which focuses on a different grade-level context each year. For example, grade four focuses on Kentucky studies and regions of the United States through integration of all five strands. Grade five includes an integrated focus on United States history. Regardless of the grade-level context, students incorporate each of the five categories of social studies to explore the content.

The required content is devised so that districts/schools can arrange the content in a way that best meets their curricular needs. For example, the content can be provided in a chronological manner (e.g., United States history--colonization to modern times), in a thematic way (e.g., Kentucky studies through a geographic perspective), or another configuration the district/school may choose.

In addition to specifying the essential social studies content, the bulleted items provide connections to Kentucky's Learning Goal 5 (Think and Solve Problems) and Goal 6 (Connect and Integrate Knowledge). These connections provide a comprehensive link between essential content and the skills and abilities important to learning. Lists in parentheses (designated with an "e.g.") are suggestions for instruction and are not meant to be comprehensive.

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Grade 4 Social Studies

Academic	Clause A. M. C.
Expectations	Content/Process
Historical Perspective (2.20)	 Students will develop a chronological understanding of Kentucky's early development as a territory and state. explore different perspectives and interpretations of Kentucky history by using primary and secondary sources, artifacts, and time lines. examine cause-and-effect relationships for events in Kentucky history and understand that some events had multiple causes. understand different groups throughout Kentucky's history and their reasons for exploring and/or settling in Kentucky. recognize how lifestyles and conditions have changed over time in Kentucky. understand that specific symbols, slogans, buildings, and monuments represent ideas and events in Kentucky's history.
Geography (2.19)	 Students will understand that all places on Earth have an absolute and relative location. recognize the five themes of geography (location, place, regions, movement, and relationships within places) and use them to analyze geographic issues and problems in Kentucky and regions of the United States. use various representations of the Earth (e.g., maps, globes, mental maps) to find and explain human and physical geographic features in Kentucky and regions of the United States. understand how humans have interacted with the physical environment to meet their needs in Kentucky and regions in the United States. recognize how the physical environment, especially in the past, limited and promoted human settlement and activities in Kentucky. use a variety of tools to obtain and present geographic information about the United States and its close neighbors (i.e., Canada, Mexico). develop mental maps of the United States and its regions. recognize unique places in regions of the United States.
Economics (2.18)	 Students will understand the basic economic problem of scarcity (imbalance between unlimited wants and limited resources) and recognize how people have addressed the problem through decision making. understand that producers create goods and services and consumers make economic decisions and choices. understand economic concepts (e.g., markets, goods and services, supply and demand, scarcity, opportunity cost, money as a means of exchange, profits) and use them appropriately in context to explain conditions or events in Kentucky history and regions of the United States. recognize that economic systems are created to deal with the problem of scarcity.
Government and Civics (2.14 & 2.15)	 Students will understand the basic purposes of government in Kentucky including the establishment and maintenance of order, the protection of rights of individuals, and the promotion of the common good. recognize the three levels of government. identify the branches of government at each level and recognize the offices associated with the branches. understand that individuals have rights and responsibilities that change when people assume different roles in different groups. recognize that, in a democratic society, individuals need to participate in government and civic affairs.

Grade 4 Social Studies (cont.)

Academic Expectations	Content/Process
Culture and Society (2.16 & 2.17)	 Students will understand similarities and differences in the ways groups and cultures within Kentucky and regions of the United States address similar needs and concerns. recognize the elements of culture using different groups from Kentucky's past and regions of the United States as examples. understand how social institutions in Kentucky's past and regions of the United States respond to human needs, structure society, and influence behavior. recognize how tensions and conflict can develop between and among individuals, groups, and institutions. analyze strategies and ways to achieve conflict resolution.

Grade 5 Social Studies

Academic	
Expectations	Content/Process
Historical Perspective (2.20)	 Students will explore the interpretive nature (how perceptions of people and passing of time influence accounts of historical events) of the history of the United States using a variety of tools (e.g., primary and secondary sources, data, artifacts). develop a chronological understanding of the history of the United States and recognize cause-and-effect relationships and multiple causation. recognize broad historical periods and eras of the history of the United States (i.e., Land and People before Columbus, Age of Exploration, Colonization, War for Independence, Young Republic, Westward Expansion, Industrialism, Twentieth Century). trace change over time in the history of the United States and identify reasons for change. examine the historical contributions of individuals and groups. recognize the significance of important symbols, monuments, patriotic songs, poems, and written passages in the history of the United States. recognize basic similarities and differences in the United States, Canada, and Mexico.
Geography (2.19)	 Students will use a variety of tools to obtain and present geographic information (e.g., landforms, natural resources, natural disasters) about the United States and its close neighbors (i.e., Canada, Mexico). develop mental maps of the United States. recognize unique places in the United States. examine how the history of the United States was influenced by its physical environment. understand human settlement patterns in the United States and how they were related to the physical environment. understand how the people of the United States have used technology to modify the environment to meet their needs.
Economics (2.18)	 Students will recognize the impact of economic factors (e.g., security, growth, desire for profits) on decisions made by individuals, businesses, and governments in the United States. examine basic components (e.g., taxes, goods and services provided by government) of the economic system of the United States . trace changes over time in the economic system of the United States, including changes in the goods and services produced by United States workers and the impact of specialization.
Government and Civics (2.14 & 2.15)	 Students will recognize the basic purpose of democratic governments including the establishment of order, security, and the attainment of common goals. understand that the Constitution of the United States establishes a government in which powers are shared among different levels and branches. understand that, in a democratic society, citizens have rights and responsibilities. explore the rights and responsibilities of citizens in real-life situations.

Grade 5 Social Studies (cont.)

Academic Expectations	Content/Process
Culture and Society (2.16 & 2.17)	 Students will understand how culture in the United States has been influenced by languages, literature, arts, beliefs, and behaviors of diverse groups. recognize social institutions and their impact in the history of the United States. examine social interactions among diverse groups in the history of the United States.